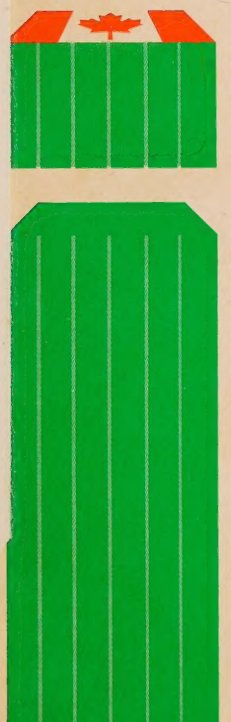
Immigration and inflation

Larry Epstein



Canadian immigration and population study

Background Study # 17

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PREFACE

Due to many considerations, it has not been possible to analyze extensively all factors pertaining to immigration and price stability. Data limitations and time constraints, to mention but two restrictions, hindered any attempt to resolve certain issues in an empirical manner.

The author acknowledges the assistance of Dr. Li who contributed considerably to Section 2 and to Martin Abrams for many valuable suggestions and comments.

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1

INTRODUCTION

In the 1966 White Paper on immigration, it was explicitly stated that "immigration policy must be consistent with national economic policy in general and with national manpower and social policies in particular". As a contribution to evaluating the extent to which this consistency has been achieved in the last several years and to examining the way in which it may be achieved in the future, this paper considers the relationship between immigration and reasonable price stability, one of the five general goals for the Canadian economy formulated in the First Annual Review of the Economic Council in 1964.

Immigrants may influence price stability in several ways. They add to both aggregate demand and aggregate supply in the economy and so, depending on the balance between the two, may increase or reduce inflationary pressures. This overall impact may be low, yet pressures may be generated in certain industries or regions, and these pressures may then spread through the economy. Occupational bottlenecks and shortages may be relieved by immigrants possessing the required skills and so pressure on costs, and hence on prices, may be reduced.

As will become clear as we proceed, to hope to obtain a precise measure of the contribution which immigration has made to attenuating or aggravating recent inflation in Canada, is at present unrealistic. There are many theoretical and empirical difficulties in substantiating quantitative, and even qualitative claims about the above impacts of immigration, particularly with respect to the effects on occupational bottlenecks and specific regions and industries. However, we shall draw some conclusions about the probable order of magnitude of the impact of immigration. This we shall do partly on the basis of a critical examination of studies that have been carried out for Canada and other countries and partly on the basis of an independent analysis. In conclusion, we comment on some of the policy implications of our analysis.

Obviously our study of the impact of immigration is very much a partial one, ignoring as it does most of the economic consequences of immigration and all of its social and cultural implications, and our analysis and conclusions should be read in this light. Immigration policy is only one of several alternative tools which can be used to promote price stability, and the optimal mix of immigration, monetary, fiscal and manpower policies must be formulated simultaneously and in view of Canada's overall economic and social objectives.

We precede our analysis of the effects of immigration on price stability with a brief overview in Section 2 of the trends and causes of inflation in Canada in the postwar period. This enables us to view the impact of immigration in the context of the major determinants and forces of inflation and so provides some perspective on the significance of this impact.

2

THE NATURE AND CAUSES OF INFLATION IN CANADA

Since the end of the Second World War, Canada has experienced four distinct periods of inflation: the immediate postwar years, the Korean War period, the late 1950s, and the period since 1965 (See Table 2.1.)

The immediate post-war period, beginning in June 1946, and ending in December 1948, was characterized as a periodic "one shot" burst of inflation. This inflation could mainly be attributed to the excess aggregate demand that was partly built up during the war and partly resulted from the easy-money and tax-cut policies pursued in 1945 and 1946 in order to maintain full employment.

The second period of inflation began in June 1950, just at the outbreak of the Korean War, and ended in December 1951. It was a consequence of the increased military expenditures superimposed on an already substantial capital boom. Inflationary expectations caused by the war also played an important role in causing a rapid rate of price increase, a rate even more rapid than was experienced in the first period.

With a moderate rate of price increase, the third period of inflation began in the second quarter of 1955 and continued through 1958, even though the growth in real output declined sharply and unemployment rose in 1957. This inflation was due, in essence, to the huge amount of capital inflow from the United States accompanied by a rapid expansion of credit and bank loans, which brought forth an excess of aggregate demand.

Though these three periods of inflation differ in many respects, they have in common the fact that first, they were of relatively short duration and second, they could be explained in large part, though not entirely, in macroeconomic terms. Aggregate demand for goods and services exceeded the capacity of the economy to produce those goods and services, forcing prices upwards. The most recent inflation in Canada differs from these earlier experiences in these two respects.

Strong demand pressures, led by a surge in exports, business investment and housing, initiated the rise in prices in 1965. Inflation has persisted for an unprecedented length of time, however, despite the conditions of slack demand pressure and high unemployment in recent years. Several explanations have been put forward. Widely held is the view that "inflationary expectations", formed on the basis of experience during the prolonged inflationary expansion of the 1960s, have resulted in a wage and price setting behaviour geared to expectations of a substantial rate of continuing inflation.

External factors have also been cited as having played an important part. Since 30 to 35 percent of the Canadian economy is directly exposed to prices set in the world market, rising world prices inevitably impinge on prices of our home goods through factor markets linking our export and domestic industries. Furthermore, increases in the price of imported goods push up the cost of living and induce bargaining for larger wage increases.

Finally, using the "structuralist" theories of inflation popularized by Schultze (25), economists have tried to understand the recent inflation by means of a disaggregated analysis. For example, since prices are more responsive to excess demand than to excess supply, a general rise in prices results from excess demand in certain "key" industries or regions, even though in the aggregate, there is spare capacity. Similarly a high degree of disequilibrium in the labour market leads to wage and hence price inflation, since wage increases in the tighter sectors of the labour market are transferred, by institutional channels to the remaining sectors. In short, the non-uniform distribution of demand and supply, and structural imbalances have contributed to recent inflation.

Economic analysis has not yet reached the stage where measures of the significance of each of the above factors in the recent Canadian experience may be derived. Our intention is merely to indicate some of the major factors of inflation. With this background, we may proceed to discuss the impact of immigration on these factors and hence on price stability.

Obviously not all of these inflationary forces are affected directly by immigration. Inflationary expectations are at most indirectly affected, while the influence of rapidly rising foreign prices on the domestic scene is only marginally affected by immigrants through their impact on the balance of payments. Immigrants more directly influence both the aggregate levels and the distributions of demand and supply in the economy. The aggregate impact is the subject of the next section, and the structural impact is examined in Sections 4 and 5. Very little is known about the industrial compositions of immigrant expenditures and of expenditures induced by immigration. Therefore, we confine ourselves to examining the way in which occupational and regional imbalances in Canada are affected by immigration.

TABLE 2.1
CONSUMER PRICE INDEXES, AND UNEMPLOYMENT RATES, CANADA 1946–1972

Year	CPI 1961=100	Rate of Change in CPI	Unemployment Rate
1946	60.0	3.4	3.4
1947	65.6	9.3	2.2
1948	75.1	14.5	2.3
1949	77.4	3.1	2.8
1950	79.6	2.8	3.6
1951	88.0	10.6	2.4
1952	90.2	2.5	2.9
1953	89.4	0.9	3.0
1954	89.9	0.6	4.6
1955	90.1	0.2	4.4
1956	91.4	1.4	3.4
1957	94.3	3.2	4.6
1958	96.8	2.7	7.0
1959	97.9	1.1	6.0
1960	99.1	1.2	7.0
1961	100.0	− 0.9	7.1
1962	101.2	1.2	5.9
1963	103.0	1.8	5.5
1964	104.8	1.7	4.7
1965	107.4	2.5	3.9
1966	111.4	3.7	3.6
1967	115.4	3.6	4.1
1968	120.1	4.1	4.8
1969	125.5	4.5	4.7
1970	129.7	3.4	5.9
1971	133.4	2.9	6.4
1972	139.8	4.8	6.3

Source: *Prices and Price Indexes* and *The Labour Force,* Statistics Canada.

3

THE IMPACT OF IMMIGRATION ON EXCESS AGGREGATE DEMAND IN CANADA

Immigrants affect both the aggregate demand for output and the aggregate (potential) supply. They contribute to supply by adding to the supply of labour, by relieving labour bottlenecks and so permitting the utilization of previously unemployable resources, and perhaps by adding to the stock of physical capital, either directly, or by inducing increased foreign investment.

Aggregate demand is increased as a result of immigrants' needs as consumers for goods and services, the level of which depends on their level of earnings, the savings brought with them into the country, their remittances to their countries of origin, and their marginal propensity to consume. The level of income of Canadians rises to the extent that profits on immigrant labour accrue to Canadians and not to immigrants, and so the demand for consumption goods increases even further. Government expenditure, which may be thought of as consisting of expenditure for current goods and services and public investment to increase the stock of social capital, also increases as a result of immigration. The latter, in particular, is probably significant, since houses and other social capital, such as hospitals, schools and roads, must be provided to meet the needs of the increased population. Finally, the employed immigrant workers require industrial capital, such as factory space, equipment and vehicles, for their work. If there is insufficient spare industrial capital, it must be provided by increased private investment.

The aggregate impact of immigration on the price level is clearly a function of the balance between the contribution it makes to demand and to supply. If the additional resources made available by immigrants for the production of consumption goods and new investment are not sufficient to cover the needs of the new members of the population, at least for the first few years after arrival, then immigrants contribute to short-run inflationary forces. On the other hand, if they increase the capacity of the economy more than the demand for output, they contribute to price stability.

In order to determine which of these is the case for Canada, we consider studies of the effects of immigration on excess aggregate demand which have been carried out for Canada and for other countries. Many such studies have been done and opposing conclusions reached. To some extent the divergence in conclusions is due to the variety of countries and time periods considered. However, for the most part it is due to the differences in the basic assumptions underlying the analyses, and to the fact that the conclusions are highly sensitive to some of those assumptions. Below we examine critically the implications of these analyses for the Canadian experience, dealing first with the studies which predict that immigration has an inflationary impact and then with those that predict a deflationary impact.

A. Studies Claiming an Inflationary Impact

This group includes: the paper by Mishan and Needleman (19) on Jamaican immigration into the United Kingdom; the Report by the Monetary and Economic Council in New Zealand (21) on immigration into New Zealand in the early 1960s; papers by Arndt (2) and Karmel (13) which argue that post-war immigration added a powerful inflationary force to the Australian economy; and a study by Jones and Smith (12) of New Commonwealth immigration into the United Kingdom, which states that immigration probably has an inflationary impact but claims that the magnitude of the impact is very often exaggerated. Since the arguments in all of these articles have similar structures, and since the Mishan and Needleman paper is the most carefully stated, our analysis concentrates on this paper; although our comments do not apply equally to all of the papers, they do apply to most of them to some extent.

The inflationary impact of immigration and its magnitude and duration are strongly influenced by the demand for investment, industrial and social, which is induced by immigration, and the time span over which it is spread. For example, in (19), the assumptions that each immigrant family will be provided with a stock of social and industrial capital equal to the average (Y=1) and that this capital will be provided over a period of two years (t=2), imply investment demand generated by a single family of the order of £3,000 per annum. Taking instead a value of Y=.75 and t=2, investment demand would be only £900. Taking Y less than .1 and t=2 results in a path of excess aggregate supply. Mishan and Needleman assume Y=1, t=2 and so several years of excess demand result. Each of these assumptions is open to challenge in general, and in the Canadian context in particular.

An important consideration is the existence of spare capital capacity (apart from the spare capacity resulting from emigration). Unless the pattern of immigrant demand differs markedly from the pattern of excess capacity, some of the needs of immigrants may generally be satisfied by activating spare capital capacity. The margin of spare capital capacity that would be needed to meet the additional demand derived from immigration is very small. For example, in the case studies by Mishan and Needleman, an annual inflow of 186,000 families would be needed to use up 1 percent of the capital stock.

Although Canada as a whole has a significant amount of spare capacity in social capital, about 50 percent of immigrants in recent years have gone to Toronto, Montreal and Vancouver (as opposed to a percentage of only 30 percent of Canadians living in these areas), where congestion is more the rule than is excess capacity. However, Jones and Smith have argued for the United Kingdom, and it applies also to Canada, that "there is much *absorptive* capacity in the existing stock of social capital — elasticity of which immigrants have made full use, especially in the case of housing". For Canada, this would mean that a significant part of immigrant housing needs, at least for a few years, is satisfied by the delayed scrapping of older houses. Also, the preponderance of young and able-bodied immigrants suggests that the hospital usage rate for immigrants is lower than the indigenous rate. A good portion of capital expenditure of health and welfare authorities is concerned with services for the aged, handicapped and mentally ill, all of which are greatly underrepresented among immigrants. The demand for educational services is relatively smaller among immigrants because of the smaller

proportion of school-age children. (The percentage of immigrants between the ages of 5 and 19 is about 20 percent, while the corresponding percentage for Canadians is about 31 percent.) It is clear that the per capita social capital investment induced by immigration is considerably smaller than the existing per capita stock at least for a few years.[1]

Jones and Smith have estimated that at most, the influx of New Commonwealth immigrants into the United Kingdom between 1961 and 1966 had an impact on gross capital formation in that period of 2.5 percent. Assuming that all immigrant social capital needs were met by delayed scrappings, the percentage falls to 1.5 percent. Since New Commonwealth immigration was responsible for about a third of the population increase between 1961 and 1966, this suggests a small impact of immigration on excess demand when compared with many other possible sources. (Immigration into Canada during the 1961-71 period represented about 22 percent of the population increase during the period.)

There are several further comments one must make. First, Jones and Smith recognize that though immigrants' needs for capital may be satisfied partially by delayed scrappings for the first few years, they must eventually be provided with the same amount of social and possibly industrial capital as enjoyed by the indigenous population. Experiences in Switzerland in the late 1950s and 1960s suggest that a time period of four to five years for filling immigrant needs is realistic. As illustrated above, this large time period reduces considerably the induced excess demand computed.

Productivity advances, which may provide some of the immigrants' needs, are ignored by most of the "inflationary papers". Though a process of capital-widening (the maintenance of the per capita stock of capital and hence income for an increasing number of people) is emphasized in these papers, there is at the same time an ongoing process of capital-deepening (an increase in the stock of capital for a given population). Therefore, there is to some extent a trade-off between the growth of per capita income and inflationary pressure. The excess demand generated by immigrants may be reduced if the rate of increase of the standard of living is slowed down. The extent to which per capita capital accumulation has been reduced in Canada by immigration is a matter for further research.

More important is the identification made by Mishan and Needleman of needs with demands. There is no logical necessity for needs to be translated into effective demand. Government expenditures on public utilities and essential services, for example, will increase automatically and more or less predictably with immigration. However, industrial investment and, for the most part, residential construction are determined in the private sector, and will be undertaken only if the economic climate is considered favourable. Immigration, since it implies an expanding market, is likely to react favourably on businessmen's expectations. However, there are many other factors which influence business psychology, and the extent to which immigration provides an expansionary force in the economy depends very much on the economic climate at the time.[2] Implied of course is a trade-off between

[1]See (3; pp. 61-5) and (12; chaps. 6-7) for a more detailed discussion and for some substantiation for these statements in the context of immigration into the United Kingdom and other European countries.

[2]The fact that the extent of spare capital capacity also depends on the level of economic activity at the time is another reason why this is so.

unemployment and inflation, for to the extent that the possibilities of substitution between labour and capital are limited, and to the extent that wages and prices are slow to adjust, at least in the short-run, the unemployment level will rise. A quantification of the investment responses and of their implications for inflationary pressure in Canada requires an econometric model.

The assumption made by Mishan and Needleman that there is zero substitutability between labour and capital also introduces an inflationary bias into the result for it implies that a large amount of new industrial investment must be forthcoming if the immigrants are to be employed.

Other factors ignored by Mishan and Needleman, such as the existence of economies of scale in production and the possibly higher propensity of the immigrants to save and thus provide funds for investment, also suggest that their analysis exaggerates the impact of immigration.

Though one might think that the economies of scale might be significant in Canada, their effects would be almost impossible to quantify and have been dealt with very little in the literature. Even less can be said about the effect of the different consumption pattern of immigrants for very little is known about it. The Mishan and Needleman analysis, however, suggests that this effect is probably nowhere as significant as the other factors, namely the role of investment induced by immigration. Though most of the preceding discussion has similarly suffered from a lack of quantitative measures, the impression that most of the "inflationary papers" grossly overestimate the inflationary impact of immigration has certainly been conveyed.

B. Studies Claiming a Deflationary Impact

Included in this group are: an econometric study by Kmenta (15) of the Australian experience; an analysis of postwar Europe by Kindleberger (14), who states that "high rates of savings and of remittance abroad of the average immigrant make him contribute more to supply than to demand and thus hold down inflation"; and simulations on the TRACE and CANDIDE econometric models performed by Davies in (4) and (5), where he argues that immigration into Canada has a deflationary impact.[1]

The Kindleberger statement is not given much substantiation in (14) and so lends itself to little specific criticism. The Kmenta study has been criticized thoroughly in (6) and (17), where it has been argued that his approach is unsatisfactory and his results unconvincing. We turn our attention to the work done by Davies for Canada.

Using the University of Toronto TRACE model, modified as described in (4) so as to endogenize the population and labour supply, Davies simulated the effects of seven different levels of immigration over the 1972 to 1980 period. The average

[1]The TRACE model distinguishes only three types of labour, unskilled, skilled and professional, and the CANDIDE model has no occupational breakdown at all of labour supply, and so neither is capable of reflecting the structural impact of immigration on the labour force. Neither are the regional or sectoral impacts of immigration successfully captured by these models. Thus the Davies simulations are concerned essentially with the effects on *excess aggregate demand*. The same is true of the other studies referred to in parts A and B, or at least to those parts of the studies to which we refer.

rates of growth of consumer prices over the period, for each simulated level of immigration, assuming an annual emigration of 60,000 people, are shown in Table 3.1.

TABLE 3.1
IMMIGRATION AND PRICE INCREASES

Gross Immigration	Average Rate of Growth of Consumer Prices
0	2.09
80,000	1.87
120,000	1.79
140,000	1.75
160,000	1.70
200,000	1.64
300,000	1.49

Source: Davies G.W., *Effects of Immigration on the Canadian Economy from 1972 to 1980,* p. 30, Table 9.

Immigration is shown to decrease the rate of price inflation by an average of .20 percentage points for every additional 100,000 people. This is in direct contradiction to the results described above, though the deflationary impact is not very significant. We do not intend to undertake a thorough analysis of the Davies simulations. However, it is felt that some aspects of the structure of the TRACE model do bias the results and these we discuss briefly.

As noted in (4; p. 6), "residential construction expenditures in the model are related indirectly to total population. In reality, the proportion of the total population aged, for example, 20 to 40 would be a more appropriate variable. Since immigrants are more concentrated in these age groups than is the total population, some understatement of their impact may be involved here."

Second, the model does not reflect the fact that immigrants may assume jobs that would otherwise have remained vacant. Rather, it assumes that there is no new income stream generated by immigrants apart from that arising from increased expenditures resulting from the same original income stream but with a higher population. Since immigrants often do generate new income (and expenditure) streams, another understatement is present.

More significant is the fact that government expenditures are exogenous and are not related directly to the population.[1] Though it is argued that immigrants often take advantage of the absorptive capacity of social capital, the position that no new capital at all need be provided, for a long period of time, is just as extreme and unacceptable as the positions taken by Mishan and Needleman. In addition, government current expenditures on goods and services will certainly increase somewhat with the increased population size. The discussion and illustrations given

[1]The same is true of the Kmenta model.

above demonstrate the sensitivity of the final results to the assumptions made about government investment, and point to the fact that a significant understatement is probably involved here.

Finally, the models discussed above predicted levels of induced industrial investment without any behavioural basis for their predictions. The TRACE model, on the other hand, specifies an investment equation based on the neoclassical theory of investment, and this equation plays a significant role in producing the deflationary results. In fact, the model predicts that higher levels of immigration result in lower rates of growth in business nonagricultural investment: this is so because while immigrants increase aggregate demand in the economy and so encourage investment, they also increase aggregate capacity (by supplying a large amount of highly skilled labour), thereby reducing the need to invest.

Simulations performed on CANDIDE tend to corroborate our claim about the importance of the level of government expenditure induced by immigration in determining the net impact on prices. In CANDIDE, government expenditures are related to population, and simulations with CANDIDE have indicated that an increase in the level of gross immigration by 100,000 people would reduce the rate of price inflation by only .06 percentage points. The complete simulation results, as well as a discussion of the extent to which CANDIDE successfully captures the effects of immigration, may be found in (5).

C. Conclusions

Though the discussion has failed to produce any precise measure of the impact of immigration on excess aggregate demand and hence on price stability, we have made some revelations. We have seen that the "inflationary papers" by and large significantly overestimate the impact of immigration. Only the very moderate results derived by Jones and Smith seem plausible. Certainly with the existence of spare industrial capital capacity and the uncertain economic climate in Canada, we would not expect immigration to induce a large volume of investment. On the other hand, the Davies results are probably understatements. We expect that the true effect in Canada lies somewhere between the effects predicted by these studies. In other words, we expect that the rate of price inflation would be affected only marginally by levels of net immigration up to, say, 240,000 people, though we cannot say what the direction of the effect is likely to be.

We have to qualify these remarks, however, since our analysis to date has been completely aggregative. This we attempt to rectify in the next two sections by investigating the extent to which immigrants have promoted price stability in Canada by easing labour bottlenecks and by reducing structural imbalances in the labour market.

4

IMMIGRATION AND LABOUR SHORTAGES IN CANADA

A. Labour Shortages and Wage Increases

A claim very often made concerning immigration in Canada and elsewhere is that immigrants, by providing skills that are in shortage in the receiving country, promote price stability. (For example, Kindleberger (14) and Fellner (7) have argued that the migratory movements in Northern European countries during the 1950s and 1960s eased labour bottlenecks and so permitted rapid expansion under stable conditions.) The reasoning is that shortages in critical occupations result in rising wages in those occupations, which in turn, by the wage-spread hypothesis, generate a general rise in the level of wages. By relieving some of these shortages, therefore, immigrants relieve the subsequent pressure on prices.

An examination in (12) of the effect of New Commonwealth immigration into the United Kingdom during the period 1961-66 on occupational wages suggests that, for the most part, occupations where the numbers of New Commonwealth workers were disproportionately large tended to enjoy *above*-average pay increases. Though the authors admit that to the extent that New Commonwealth workers entered occupations where the shortage of labour is most marked, they may have restrained wages from rising even further, they state that it would be almost impossible to gauge this effect and the ramifications throughout the labour market on restraining the general level of wages. This difficulty applies equally well to our analysis.

A recent study in the Department of Manpower and Immigration (18) examined existing data on occupational wages and shortages in Canada. It was expected that wages in "shortage" occupations would be found to have risen relative to wages in occupations where there had been adequate supply. To the extent that immigrants had filled some of the shortages and to the extent that they had prevented shortages from developing in other occupations, it could then be argued that immigration had lessened inflationary pressure in a demonstrable manner. It was found that there was no consistent relationship between wages in "shortage" occupations and wages in "no shortage" occupations.

A principal reason is the following: an adjustment to labour shortages need not necessarily take the form of shifts in relative wage rates. Rather, the employer may increase his effort in dissemination of information about job opportunities and in recruiting, upgrade or accelerate the proportion of other workers, or both, redesign the vacant job so that other occupational groups may perform the necessary tasks, or postpone production. This is argued by Reder (23) in his exposition of a theory of occupational wage structure. Evidence that these forms of adjustment are widespread and that wage changes may offer little indication of a shortage situation is found in a U.S. Department of Labour Study of selected skilled occupations in short supply (8). In Canada, further substantiation is found in a report of the Technical Service Council (26), which deals with the way in which Canadian employers recruit professionals.

A further reason why we should not expect wage changes to be an accurate reflection of shortages, is the existence of imperfections in the Canadian labour market. A strong union may win for its members wage increases in excess of those gained by a less-organized group regardless of the demand-supply market situation. In addition, one might argue that wage increases granted to a shortage occupation will probably "spill over" into other labour markets eliminating any relative shift in wages.

Obviously, these conjectures concerning the roles which unions and wage spill-over play in determining the occupational or regional wage structure, require empirical verification. (Studies of the United Kingdom by Hines (9), (10) have found a significant association between the rate of increase in wages and the rate of increase in trade union membership.) Evidence for the wage-spread hypothesis in Canada is found in (1), and (27). However, given the evidence cited above concerning the limited use of wage shifts as an adjustment mechanism, and the results of the McDougald study (18), it is clear that a highly sophisticated analysis would be required to isolate the relationship between shortages and wages. One such analysis is discussed in Section 5 below, but in the meantime our approach is to say the following: however firms adjust to shortages, pressure will be exerted on prices. If production is postponed, excessive demand will push prices up. On the other hand, if shortages are filled by any of the other techniques mentioned, costs will rise, directly if wages are increased, or indirectly otherwise, for example, due to the use of less efficient methods of production. Pressure will thus be exerted on the prices of the products involved which may "spill over" into other sectors of the economy. By filling labour shortages, therefore, immigrants reduce inflationary pressure, though the significance of this contribution to price stability may only be guessed. We now turn to an examination of the role which immigration has played in filling occupational and regional labour shortages in Canada.

B. The Canadian Experience

In the early postwar period, the character of Canadian economic growth and the increasing technical complexity of production processes and products resulted in an unusually rapid growth in requirements for skilled workers and for workers in the more highly technical occupational fields such as engineers and draughtsmen. A significant part of these requirements were met through immigration.

Over the decade 1946-56, the number of skilled workers in Canada increased by an estimated 280,000. Because of attrition, by death or retirement for example, the total new supply of skilled workers was much larger. The contribution made by net immigration to gross supply, which was considerably more than 280,000, was about 110,000, which amounted to more than twice the contribution of apprenticeship programs during the period. Due in large part to this contribution, the 1955-56 period experienced a very large expansion of employment, while witnessing only few country-wide shortages of skilled tradesmen.[1]

Net immigration was a relatively less significant factor in the employment expansion of professionals during the period. Employment increased by about

[1] A close examination of immigration and labour shortages from 1946 to 1956, may be found in a Department of Labour Study (24).

95,000, while net immigration amounted to 16,000 and university graduations totalled approximately 134,000. Widespread shortages did occur in many professional fields, and while immigration helped to ease the shortages in certain professional occupations, it by no means solved the overall problem. For example, in the engineering fields where undoubtedly the most pronounced shortages occurred, the supply of engineers from net immigration shrank each year from 1953 to 1955 as did supply from graduations. Consequently, an unusually severe shortage of engineers resulted in 1955 and 1956.

The situation from 1957 to 1966 was somewhat similar. Few widespread shortages developed for skilled tradesmen, in spite of the fact that the employment of tradesmen during this period increased by about 80 percent. One of the reasons for the lack of severe shortages is the 160,000 tradesmen contributed by net immigration. Net immigration of professional and technical workers amounted to about 56,000. However, prolonged shortages of professionals and semi-professionals persisted, even during the years of extremely high unemployment in the late 1950s and early 1960s.

We look more closely at the situation since 1967. A very rough indication of the nature of labour shortages during this recent period is provided by Table 4.1. However, the reader must be cautioned in two respects when interpreting the figures: firstly, with respect to attaching any significance to the absolute numbers in the tables — they are based on figures reported by CMCs on the number of vacancies registered at CMCs which have been unfilled for at least 30 days, and so grossly underestimate the extent of shortages in the entire labour market; and secondly, the relative magnitudes of shortages in certain occupational groups may not reflect accurately the actual relative degrees of shortage. This, of course, is due to the fact that the degree of penetration of CMCs into the labour market is not uniform across occupational groups. The OSS figures tend to understate the degree of shortage in professsional and technical groups relative to that in most other groups. (An extreme example is the case of computer programmers who are known to have been in great demand during this period, but for whom the figures in Table 4.1 do not suggest any significant shortage.) Nevertheless, the figures do accurately reflect a significant shortage of tailors and furriers, machinists and mechanics, as well as nurses, some clerical and sales workers and domestic servants.

Neither of the above disadvantages of the OSS is present in the Job Vacancy Survey, but JVS data are available only for the last few years and so cannot provide a complete picture of the situation during the period. In order to get some idea of the absolute level of shortages and a better idea of the relative degrees of shortages in different occupational groups, we include some JVS data in Table 4.2. The figures refer to vacancies for full-time jobs which have been unfilled for one month or more. The number of shortages has almost doubled over the past two years, with the largest increases occurring in the managerial, engineering and mathematics, clerical, service and product fabricating, assembling and repairing groups.

The number of immigrants and emigrants in occupations which at some time or other since 1967 exhibited a shortage is given in Table 4.3. In several shortage occupations there was a large net influx of immigrants. For example, during the 1967-71 period there was a net immigration of about 15,000 tailors and furriers, 25,000 machinists, 15,000 mechanics, 14,000 domestic servants and 8,000 nurses.

TABLE 4.1
SHORTAGES IN SELECTED OCCUPATIONS, CANADA, 1967–72*

Occupational Groups	1967** (3m. avg.)	1968	1969	1970	1971	1972 (8m. avg.)
All occupations	16,273	9,922	9,227	5,386	5,448	7,468
Managerial	265	202	211	133	109	124
Professional & technical	2,069	1,900	1,646	1,043	817	854
Engineers	242	169	245	172	89	67
Med. & dental technicians	133	105	94	65	38	61
Nursery graduate	770	786	532	310	252	266
Draftsmen	112	68	128	56	38	61
Computer programmer	2	4	4	2	–	–
Accountants & auditors	86	56	58	34	23	26
Teachers	90	150	78	31	41	59
Clerical	719	575	604	321	275	514
Stenos. and typists	253	258	377	232	184	329
Commercial sales	904	497	506	326	286	239
Financial sales	581	500	474	442	377	356
Domestic servants	2,617	1,649	1,145	587	539	607
Waiters, porters	660	376	294	107	124	165
Farmers & farm workers	237	106	66	63	82	129
Loggers	1,335	183	215	44	195	469
Miners	812	329	245	206	131	131
Construction trades	1,017	630	559	239	296	417
Plumbers	139	114	75	63	33	51
Electricians	251	144	132	83	73	112
Manufacturing & mech.	3,631	2,397	2,821	1,570	1,876	2,892
Tailors and furriers	827	822	875	418	733	1,018
Woodworkers,	123	105	131	39	67	95
Machinists	795	312	666	354	194	374
Mechanics, repairmen	693	599	573	343	578	825
Electrical & electronics	173	110	100	85	51	85

Source: Occupational Shortage Survey, Department of Manpower and Immigration.

* All occupational groups for which an annual average of 100 shortages were reported at some time during the period are included in the table.

** The reliability of the survey estimates for these first few months of its operation is questionable.

However, the extent to which immigrants have actually filled shortages, though difficult enough to assess for the earlier periods, is even more difficult to assess for the current period. This is because in recent years widespread shortages for reasonably broad occupational groups have not existed. The shortages that have existed and do exist now are very specific with respect to training, past experience, and job location. For example, the earlier widespread shortages of professional and technical workers have disappeared due to the large number of university and

TABLE 4.2
LONG-TERM VACANCIES BY OCCUPATIONS, CANADA 1971–73

Occupations*	1971 (Annual Average)	1972 (Annual Average)	1973 (Average 1st, 2nd Quarters)
All occupations	11,400	18,800	23,050
Managerial, administrative & related	475	775	1,350
Natural Science, engineering & math.	750	825	1,750
Medicine and health	1,125	1,275	1,700
Clerical and related	950	1,525	2,400
Sales	2,300	2,225	1,850
Service**	1,150	2,175	2,300
Product fabricating assembling & repairing	1,550	4,200	3,800
Construction trades	775	1,050	1,250
Other	2,275	4,850	6,650

Source: *Job Vacancy Survey,* Statistics Canada, 71–002.

* Occupations classified according to CCDO.
** Excludes domestic service in the household sector.

community college graduates that have flooded the market in recent years. The large numbers of unemployed and underemployed young people with post-secondary education bear witness to this fact. Moreover, even though most of the shortages of professionals are in the technical fields, the general shortage of engineers which prevailed through most of the earlier postwar periods, no longer exists. What do exist are shortages of engineers of certain ages, prices and types of experience in certain locations. Technical Service Council reports indicate that employers, not only of engineers but also of scientists, technicians and other university graduates, have been extremely selective of late. They prefer to fill senior positions internally, so that most vacancies are for young people and pay junior salaries. They demand specific experience, for example, a civil engineer with experience in soil mechanics as applied to airport runways. Employers' preferences are so strong that one mechanical engineer, say, may have offers of employment from several firms, while another has been out of work for some time. Lastly, many native-born professionals have tended to concentrate their job searches in the major centres like Toronto, Montreal and Vancouver, and will not consider jobs outside these centres. Therefore, a large number of shortages have developed in smaller centres and remote locations, while the competition for professional jobs in the large centres is intense.

This phenomenon of very specific shortages, is most pronounced perhaps for the professional and technical groups, but is also present for the skilled and unskilled.

TABLE 4.3
IMMIGRATION AND EMIGRATION IN SELECTED SHORTAGE OCCUPATIONS, CANADA 1967–72

Occupations	1967			1968			1969		
	Immigration	Emigration	Net	Immigration	Emigration	Net	Immigration	Emigration	Net
ALL OCCUPATIONS	101,083	13,205	87,878	86,640	16,809	69,851	76,085	11,632	64,453
Managers	3,023	950	2,073	2,385	1,166	1,219	2,566	701	1,865
Professional and technical	37,853	5,965	24,888	29,250	7,117	22,133	26,883	4,821	22,062
Engineers	3,704	1,196	2,508	2,814	1,402	1,412	2,739	848	1,891
Draughtsmen	2,830	211	2,619	2,049	420	1,629	944	233	711
Computer programmers	286	–	286	8	–	8	29	–	29
Accountants, auditors	833	177	656	587	283	304	504	221	283
Nurse graduates	4,262	1,180	3,082	3,375	1,478	1,897	3,248	1,006	2,242
Clerical occupations	16,609	1,578	15,031	12,651	2,462	10,189	12,222	1,746	10,476
Stenographers, typists	8,254	708	7,546	6,236	1,335	4,901	5,531	977	4,554
Commercial sales	3,030	404	2,626	2,631	476	2,155	2,744	334	2,410
Financial sales	328	69	259	564	88	476	543	49	494
Domestic servants	2,842	271	2,571	3,408	395	3,013	3,807	226	3,581
Waiters, porters	1,830	137	1,693	1,083	206	877	1,090	155	935
Farmers and farm workers	3,203	81	3,182	3,164	98	3,066	2,283	68	2,215
Loggers	224	217	7	82	254	–172	115	124	–9
Miners	380	20	360	496	50	446	389	23	366
Construction trades	10,643	618	10,025	7,737	868	6,869	5,964	858	5,076
Electricians	2,244	171	2,073	1,793	245	1,548	1,190	237	953

TABLE 4.3 (Continued)

Occupations	1967			1968			1969		
	Immigration	Emigration	Net	Immigration	Emigration	Net	Immigration	Emigration	Net
Manufacturing and mechanical trades	28,118	2,895	25,223	23,189	3,629	19,560	17,479	2,497	14,982
Tailors and furriers	4,674	107	4,567	3,910	92	3,518	3,907	85	3,822
Woodworkers, sawyers	1,298	10	1,288	1,824	4	1,820	1,060	5	1,055
Machinists	8,954	320	8,684	6,667	475	6,192	4,364	249	4,115
Mechanics, repairmen	4,754	442	4,312	4,906	593	4,313	4,309	486	3,823
Electrical & electronic engineers	2,200	–	2,200	1,355	–	1,355	816	–	816

Source: *Immigration Statistics, Canada,* Department of Manpower and Immigration, Ottawa; and special tabulations prepared by the United States Immigration and Naturalization Service for the Department of Manpower and Immigration.

TABLE 4.3 (Continued)

Occupations	1970			1971			1972		
	Immigration	Emigration	Net	Immigration	Emigration	Net	Immigration*	Emigration	Net
ALL OCCUPATIONS	69,237	10,981	58,256	54,288	9,205	45,080		7,458	
Managers	3,095	663	2,432	3,464	700	2,764	2,824	681	2,143
Professional and technical	22,412	4,573	17,839	16,307	4,530	11,777	15,262	3,746	11,516
Engineers	2,186	857	1,329	1,687	622	1,065		394	
Draughtsmen	1,029	135	894	730	79	651		45	
Computer programmers	25	—	25	23	—	23		—	
Accountants, auditors	422	201	221	382	206	176		142	
Nurse graduates	2,274	816	1,458	989	1,021	−32		773	
Clerical occupations	12,143	1,447	10,696	9,909	1,049	8,860	8,549	869	7,680
Stenographers, typists	5,530	685	4,845	4,073	507	3,566		424	
Commercial Sales	2,599	255	2,344	2,107	248	1,859		186	
Financial sales	431	49	382	379	40	389		39	
Domestic servants	2,985	154	2,831	2,663	150	2,513		160	
Waiters, porters	1,082	160	922	831	118	718		156	
Farmers and farm workers	2,129	69	3,060	2,160	70	2,090	2,127	47	2,080
Loggers	83	155	−72	65	73	−8	77	88	−11
Miners	272	10	262	237	14	223	144	8	136
Construction trades	6,001	733	5,268	4,005	507	3,498		380	
Electricians	1,167	230	937	767	121	146		78	

TABLE 4.3 (Continued)

Occupations	1970			1971			1972		
	Immigration	Emigration	Net	Immigration	Emigration	Net	Immigration*	Emigration	Net
Manufacturing and mechanical trades	16,005	2,713	13,292	12,161	1,714	10,447		1,208	
Tailors and furriers	3,240	104	3,142	3,072	58	3,014		38	
Woodworkers, sawyers	895	4	891	498	2	496		4	
Machinists	4,207	239	3,988	2,711	130	2,581		40	
Mechanics, repairmen	4,149	556	3,593	3,033	341	2,692		266	
Electrical & electronic engineers	689	—	689	591	—	591		—	

Source: *Immigration Statistics, Canada,* Department of Manpower and Immigration, Ottawa; and special tabulations prepared by the United States Immigration Naturalization Service for the Department of Manpower and Immigration.

* Only partial and preliminary estimates available.

(For the latter, for example, there are many vacancies for low-paying jobs in remote areas.) The problem it creates for our analysis is compounded by the nature and extent of the information available to us about immigrants.[1] Though their intended occupation is known, we do not know whether their qualifications are recognized in Canada. Though it may be possible to obtain some information about their past experience, foreign experience is often discounted by Canadian employers. Finally, though their province of destination is known, the province is not the most relevant geographical unit for our analysis.

The longitudinal survey of immigrants conducted by the Department of Manpower and Immigration does provide some information, for 1969, 1970 and 1971, about the number of immigrants that find employment in their intended occupations, and about the distribution of immigrants between major urban and other areas. However, given the scope of this paper, we attempt to improve somewhat the crude approach represented by Table 4.3 by considering data on the duration of unemployment of immigrants, also from the Longitudinal Survey. (See Table 4.4.) It is reasonable to expect that those immigrants that experienced more than four weeks unemployment in their first six months in Canada did not contribute to alleviating existing shortages. This may have been because of inadequate or inappropriate training or experience on their part, because they did not settle in the areas where the vacancies existed, or perhaps because existing vacancies were so beneath their expectations that they were unacceptable. In any case, at least 30 percent of immigrants in all occupational groups experienced an extended period of unemployment. Though a finer breakdown of occupations would undoubtedly be more helpful, these figures do give us a better idea of the proportion of immigrants in 1969 reported in Table 4.3 who might conceivably have filled shortages.

The level of disaggregation of data on shortages and immigrants that would be necessary to capture the current situation would mean that estimates from the JVS and the Longitudinal Survey would be of questionable statistical validity. Though this requires further investigation, it would seem that a nonmarginal improvement of our analysis would perhaps require a survey of employers to determine to what extent they fill shortages by hiring immigrants. (Such a question was asked in the Department of Labour 1956 Working Conditions Survey.)

The geographical aspect of shortages was mentioned above, where the limitations of our approach were outlined. In Table 4.5, we consider the regional distributions of long-term vacancies and immigration in 1971 and 1972. The distribution of immigrants is obviously not dictated by the distribution of shortages alone. Witness, for example, the large number of long-term vacancies in the Atlantic region and the small proportion of immigrants that go there.[2] Neither does an increase (decrease) in the number of shortages in a given province necessarily invoke a larger (smaller) proportion of immigrants to that province.

[1] Actually, the limiting factor in the analysis is the data on vacancies and the large sampling errors associated with them, as mentioned elsewhere on this page.

[2] This may be partly explained by the occupation compositions of the shortages and of the immigrant labour force. Given the diminishing returns to pursuing such an analysis and the limited scope of the papers we chose not to consider the simultaneous occupational and geographical distributions of immigrants and shortages. A more thorough analysis, however, would require that this be done.

TABLE 4.4
DURATION OF UNEMPLOYMENT OF IMMIGRANTS, CANADA, 1969

Occupation	Total Weeks Unemployed in First Six Months After Arrival (Percentages)			
	0–3	4–26	No Answer	Total
Managers	43.8	33.3	22.9	100
Engineers	45.6	32.0	22.4	100
Other professionals	39.6	28.6	31.8	100
Clerical	30.7	40.1	29.2	100
Sales	40.5	38.0	21.5	100
Service and recreation	34.6	29.5	35.9	100
Farming	32.5	35.0	32.5	100
Craftsmen	31.1	37.2	31.7	100
Labourers	34.6	37.6	27.8	100
Not stated	18.7	42.2	39.1	100
All others	27.8	33.7	38.5	100
TOTAL	34.7	34.2	31.1	100

Source: *Three Years in Canada. First report of the Longitudinal Survey on the Economic and Social Adaptation of Immigrants.* Department of Manpower and Immigration, Ottawa.

In Table 4.6 we consider distributions by urban area. Though data limitations prevented us from using more compatible periods of analysis for vacancies and immigration, the relative stability of the two distributions through time does permit some approximate conclusions. Most notably the figures show that while two-thirds of shortages exist in areas outside the three major metropolitan areas, less than one-half of immigrants intend to settle there, and a disproportionately large number head for Toronto. This points out once more the limited pull which long-term vacancies exercise on immigrants.

However, conclusions about the impact of immigrants on the regional distribution of shortages are impossible to derive from these figures. While the large flow of immigrants to Toronto, say, increases the supply of labour there, it also increases the demand for production and hence labour, thus the net impact is not clear. To the extent that a local economy is relatively closed, the net impact is small because of the arguments in Section 3. However, regional, and certainly urban, economies in Canada are very open and a large portion of the additional demand induced by immigrants in Toronto is for goods produced in other areas. Thus, depending upon the pattern of trade *within* Canada, shortages in some parts of the country will be decreased, and in other parts increased by immigration.

The complaint about no consideration of demand effects applies equally well to our discussion of occupational shortages. Figures relating the number of immigrants

TABLE 4.5
PERCENTAGE DISTRIBUTION OF LONG-TERM VACANCIES AND INTENDED DESTINATION OF IMMIGRANTS BY REGIONS, CANADA, 1971–72

	Atlantic	Quebec	Ontario	Prairies	B.C.
Vacancies					
1971	15	25	41	11	8
1972	11	29	37	14	9
Immigration					
1971	3	16	53	13	16
1972	3	15	52	12	17

Source: *Quarterly Report on Job Vacancies,* Statistics Canada, 71–002; *Immigration Statistics, Canada,* Department of Manpower and Immigration.

TABLE 4.6
PERCENTAGE DISTRIBUTION OF LONG- TERM VACANCIES AND INTENDED DESTINATION OF IMMIGRANTS BY METROPOLITAN AREA, CANADA, 1969–72

	Montreal	Toronto	Vancouver	Other Canada
Vacancies				
1971	15	14	4	67
1972	16	16	5	63
Immigration				
1969	14	31	8	47
1970	11	34	8	47
1971	14	32	8	46

Source: *Job Vacancy Survey,* Statistics Canada; Longitudinal Study of Immigrants.

entering Canada in various shortage occupations do not reflect accurately the degree to which shortages decreased (potentially) as a result of immigration, because of the fact that the demand for those occupations is larger because of increased population. Though we could correct the above analysis to take some account of this, we prefer to incorporate demand effects below where we adopt a different approach to the problem. This approach has the distinct advantage that it

has the potential to quantify the impact which the immigration induced effects on labour market imbalances have on overall price stability.

5

IMMIGRATION, THE STRUCTURE OF UNEMPLOYMENT AND INFLATION IN CANADA

A. The Phillips Curve

A recent approach to evaluating the effect of skill shortages and the structure of the labour market on inflation, and therefore an approach that can perhaps be used to tell us more about the possible deflationary effects of immigration, is based on the concept of the Phillips curve. In (16) Lipsey describes the implications of the curvilinear shape of the inflation-unemployment trade-off: a given average rate of unemployment is associated with larger wage rises as the variability of the unemployment rates between sectors increases. The implication for our analysis is clear: to the extent that immigrants are concentrated in those sectors of the labour market with lower rates of unemployment, they help to decrease the dispersion of unemployment rates in the labour market, and so to improve the inflation-unemployment trade-off.

As Thirwall explains in (28), the Lipsey argument is akin to the "structuralist" theories of inflation which depend on the stickiness of wages and on wage-spread. The Phillips curve, however, provides a convenient way of testing the significance of labour market imbalances on the aggregate trade-off configuration. For example, a measure of the dispersion of unemployment rates can be inserted into the conventional Phillips curve specification to see whether it is significant in explaining aggregate wage changes. Finally, given knowledge of how immigrants distribute themselves among the various labour market sectors and how they subsequently affect the overall dispersion of unemployment rates, we could estimate the effect which their structural impact on the labour force has on inflation, for a fixed level of unemployment.

The empirical analyses which have been performed along these lines have produced different results. A study by Thirwall (28) for the United Kingdom concludes that disequilibrium in industry markets for labour has contributed significantly to the displacement of the macro-Phillips curve, while the uneven regional distribution of the demand for labour has not exerted a significant independent influence on the pace of wage rate inflation over the post-war period. In the Canadian context, research performed by the Prices and Incomes Commission (27) has also failed to discover a significant relationship between regional labour-market imbalances and the national rate of wage increase.

Somewhat more positive results are reported in a study of the United States by Charles Holt and co-workers (11). They find that demographic, geographic and occupational dispersion of unemployment each exert a significant influence on the aggregate Phillips curve. In fact they estimate that "a complete elimination of demographic dispersion from the 1969 level would reduce either the inflation rate by .6 percentage points or the level of unemployment by 14 percent. The elimination of occupational dispersion would either reduce the rate of wage

inflation 1.4 percentage points or reduce the level of unemployment 25 percent. A total elimination of geographical dispersion would reduce either the inflation rate by .3 percentage points or the level of unemployment 7.0 percent."

In spite of these results, we tend to agree with the opinions expressed in (27) about the limitations of the aggregate Phillips curve, at least as it has been used till now, for diagnosing problems at a disaggregated level. The Lipsey argument and the empirical analyses referred to above have, either implicitly or explicitly, assumed that the slope of each micro-Phillips curve is identical to the slope of the aggregate curve, i.e., wage rates in each sector are assumed to be equally sensitive to changes in the rate of unemployment in that sector. In fact, however, we would expect the degree of sensitivity to vary considerably between most sectors. (When sectors are defined by geographic regions in Canada, this has been shown in (27) to be the case.) Thus, it is conceivable that, for a given average rate of unemployment, aggregate wage inflation will increase or decrease accordingly as the unemployment rates in certain key occupational sectors decrease or increase, regardless of the change in dispersion as measured in (11) or (28). To the extent that this phenomenon is present in Canada, a proper evaluation of the structural impact of immigration requires that considerable modifications be made in existing analyses.

Equally crucial for our purposes is the determination of the effect which immigration has on unemployment rates in the various sectors of the labour market; a proper solution of this problem requires a disaggregated model. In the interim, we speculate about the "probable" impacts.

B. Implications for Canada

The figures in Table 5.1 indicate that immigrants into Canada have been concentrated in occupations with relatively low levels of unemployment. Apart from the seemingly large number of immigrants in the Craftsmen group, immigration into the four main groups, Office and Professionals, Service, Craftsmen and Primary, has been complementary with the Canadian labour force in the sense that low relative unemployment rates and high concentration of immigrants have gone hand in hand. Immigrants have been disproportionately represented, relative to the existing distribution of employed Canadian workers, in the Office and Professional and Craftsmen groups. The figures suggest that recent immigration has probably resulted in a relative loosening of the markets for these occupational groups, and in a relative tightening of the other markets. This is consistent with a reduction in the dispersion of unemployment rates except insofar as the rate for the Craftsmen group is induced to rise slightly. If we had evidence that wages were extremely responsive to unemployment levels in this market, we could maintain that even this is consistent with a net deflationary impact. With the information available to us, however, we can only guess that the net impact is still slightly deflationary, because of the loosening of market conditions for the two major occupational groups.

A more disaggregated analysis, with perhaps the occupational detail considered in the above discussion of shortages, would probably bring the situation much more clearly into focus. However, at this aggregate level, the relatively high unemployment rate for unskilled labourers and the low rate for office and professional workers suggest that price stability is best served by a composition of immigration which is heavily weighted in favour of the latter group and against the

TABLE 5.1
UNEMPLOYMENT RATES AND THE DISTRIBUTIONS OF CANADIANS AND IMMIGRANTS BY OCCUPATION, CANADA, 1961, 1966, 1971

	All Occupations	Office and Professional*	Transportation	Services and Recreation	Primary	Craftsmen, Production Process and Related Workers	Labourers and Unskilled
Proportions Employed by Occupation							
1961	1.00	.41	.06	.11	.13	.24	.05
1966	1.00	.43	.05	.11	.10	.26	.05
1971	1.00	.47	.05	.12	.08	.24	.04
Ratios of Occupational Unemployment Rate to Average Unemployment Rate							
1961	1.00	.35	1.44	.79	.96	1.30	3.06
1966	1.00	.36	1.25	.86	1.08	1.19	3.25
1971	1.00	.45	1.16	.89	.91	1.25	2.61
Proportions of Immigrants by Intended Occupation							
1961	1.00	.38	.01	.19	.07	.24	.11
1966	1.00	.44	.01	.09	.04	.34	.08
1971	1.00	.55	.01	.11	.04	.27	.02

* Includes managerial, professional, technical, clerical, sales, and communications workers.

former group.[1]

The situation is no more clear when we look at the geographic sectors of the labour market. Table 5.2 shows that disproportionate numbers of immigrants intend to settle in Ontario while relatively few go to the other regions. We might expect this to cause somewhat of a loosening of the Ontario labour market. The discrepancies between the Canadian and immigrant distributions are not nearly as great for the other regions, so that the "probable" effects on the other labour markets are less obvious. We might speculate a small loosening of the B.C. market and a tightening of the other markets. These effects are inconsistent with a reduction in the dispersion of unemployment rates inasmuch as the B.C. rate is induced to rise and the Prairies rate is induced to fall. However, to the extent that Ontario is to some degree a wage leader, the increase in the Ontario rate and the reduction in pressure on wages in Ontario which this implies, might mean that the net impact on the regional distributions of population and labour force is deflationary.

TABLE 5.2
UNEMPLOYMENT RATES AND PERCENTAGE DISTRIBUTIONS OF CANADIANS AND IMMIGRANTS BY REGION, CANADA, 1961, 1966, 1971

	Atlantic	Quebec	Ontario	Prairies	B.C.
Percentage Distribution of Canadians					
1961	10	29	34	18	9
1966	10	29	35	17	9
1971	10	28	36	16	10
Percentage Distribution of Immigrants*					
1961	3	24	51	12	10
1966	2	20	55	10	13
1971	3	16	53	13	16
Ratio of Regional Unemployment Rate to National Rate					
1961	1.58	1.30	.77	.65	1.20
1966	1.78	1.31	.69	.58	1.25
1971	1.34	1.28	.81	.70	1.09

Source: *The Labour Force,* Statistics Canada 71–001; *Immigration Statistics, Canada,* Department of Manpower and Immigration.

* Region of intended destination upon arrival in Canada.

[1] We emphasize that this implication must be accepted with caution in the light of the discussions in chapter 4 and section A of this chapter.

A similar analysis of urban distributions based on Table 5.3 suggests that the unemployment rate in Toronto is induced to rise and the rate in Other Canada is induced to fall. This is consistent with a reduction in the dispersion of unemployment rates, and, depending on the responsiveness of wages to labour market conditions in these areas, might constitute a deflationary impact.

TABLE 5.3
UNEMPLOYMENT RATES AND PERCENTAGE DISTRIBUTIONS OF CANADIANS AND IMMIGRANTS BY METROPOLITAN AREA, CANADA, 1968–1971

	Montreal	Toronto	Vancouver	Other Canada
Percentage Distribution of Canadians				
1968	12.9	11.8	4.8	70.5
1969	12.9	11.9	4.9	70.3
1970	12.8	12.1	5.0	70.1
1971	12.7	12.2	5.0	70.1
Percentage Distribution of Immigrants				
1969	14.5	30.9	7.6	47.0
1970	11.3	34.3	7.9	46.5
1971	13.7	31.8	8.7	45.8
Ratio of Area Unemployment Rate to National Rate				
1968	1.12	.62	1.19	1.06
1969	1.23	.53	1.04	1.06
1970	1.15	.66	1.34	1.02
1971	1.11	.80	1.11	1.02

Source: *The Labour Force,* Statistics Canada, 71–001; Longitudinal Survey of Immigrants; and *Estimated Populations of Metropolitan Areas of Canada,* Statistics Canada, 91–207.

It seems hardly necessary to emphasize the limited validity of such an analysis. Implicit is the assumption of a (nearly) constant geographical distribution of labour required for various levels of national production. In fact, the required geographical distribution depends on the distribution of demand. Thus, for example, the large influx of immigrants into Ontario adds not only to the supply of labour there, but also to the demand for goods. As a very rough first approximation we might assume that the latter contribution is less significant than the former, because of the openness of regional economies, so that the conclusions stated above may be derived. They are very much conclusions about short-term impacts. We have completely ignored such long-term phenomena as, for example, the increased population and labour force in Ontario attracting more capital and industry there, with the result that the labour market there is eventually as tight as previously.

Obviously a model which reflects the important inter-relationships between the various regional economies and labour markets, such as the flows of people, goods

and funds between regions, is required for a proper analysis. The paucity of information on interprovincial trade, the interprovincial flow of funds and to a slightly lesser extent, interprovincial migration, makes such an analysis extremely difficult and definitely beyond the scope of this paper. A first step in this direction might be an examination of the regionalized version of CANDIDE.

6

CONCLUSIONS AND POLICY IMPLICATIONS

A principal thrust of the discussion has been that it is extremely difficult to determine, and certainly to quantify, the effects of immigration on price stability. However, some of the points brought out do enable us to make some tentative judgments concerning these effects and their implications for immigration policy in Canada.

The analysis suggests that recent immigration into Canada has probably had a marginal impact on price stability. That the impact on excess aggregate demand has been minimal in comparison to other forces operating in the economy has been rather convincingly demonstrated. There is less evidence to substantiate claims about the structural impact, but we would conjecture that immigrants have had a minimal, though probably favourable, impact on labour market imbalances, and so have contributed somewhat to reducing cost inflation. Finally, a marginal overall impact is indicated for levels of gross immigration up to about 300,000, having identical occupational and geographical distributions, so that price stability should not be a major concern in deciding upon the optimum level of immigration.

When considering the nature of immigration which is most desirable from the point of view of price stability, and the selection criteria which are most likely to encourage that type of immigration, the analysis suggests some factors which should be taken into account. First, we repeat that, unlike the situation in the 1950s and the first half of the 1960s, Canada does not have a general shortage of highly educated and skilled workers. The shortages that do exist are for specific skills and increasingly, as the Canadian labour force becomes more sophisticated, for unskilled low-paying jobs. On the other hand, existing selection criteria give heavy weight to education and general skills, as well as to age and language capabilities, so that a highly educated person most likely will gain landed immigrant status regardless of where he might wish to locate in Canada and whether or not his skills are in shortage. Conversely, an older, less educated, but highly skilled applicant may not be accepted if his skills are in high demand. Clearly the goal of price stability is better served by selection criteria which give more weight to current labour market conditions.

Second, we have argued that widespread shortages do not exist even for skilled and professional workers. Current labour shortages are very specific with respect to education, training, past experience, age, pay and location. This suggests that it is difficult for existing selection criteria to select certain immigrants to fill shortages. As a first step, we suggest that occupational and area demand ratings be integrated to reflect the fact that shortages cannot be specified by either occupation or location alone, but must be specified by both simultaneously. Further research is called for to determine the importance of the other variables for specifying shortages, and the feasibility and reliability of more disaggregated demand ratings.

Finally, the fact that immigrants in the nominated and sponsored categories, who constitute about one-half of the total of recent immigration to Canada, are much less dependent for acceptance upon high demand ratings than are those in the independent category, suggests that an all-out effort to select immigrants according

to labour-market needs necessarily involves a change in policy towards these groups.

However, an attempt to gain greater control over nominated immigrants, and in particular over low-skilled workers who constitute a relatively large proportion of immigrants in this category, encounters the difficulties described by Dr. W. R. Böhning of the International Labour Organization in Geneva, at a recent international conference on immigration; namely, that immigration controls alone will not keep down the numbers of unskilled immigrants if nothing is done to abolish the socially undesirable jobs they come to fill. (Shortages of low-skilled workers in Canada are mainly for industrial manual work and for agricultural, forestry and low-paying service jobs.) European experience has demonstrated that unless low-skilled jobs are changed to make them more attractive to the nationals, immigrants will find ways of coming – legally or illegally – to fill them.

In conclusion we repeat the remark made in the introduction about the very limited scope of our analysis, namely, our narrow concern with price stability alone. From the point of view of Canada's general economic and social goals, the recommendations we have made may not be at all desirable or acceptable. Indeed, the study suggests that price stability considerations should play a relatively minor role in immigration policy deliberations.

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